

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 5-01-093

WASTE DISCHARGE REQUIREMENTS
FOR
WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Board), finds that:

1. Western Waterways, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 18 September 2000, for updated Waste Discharge Requirements for the Holland Riverside Marina domestic wastewater treatment facility. Additional information was submitted on 22 February 2001.
2. The facility is owned by the Discharger, and is on Assessor's Parcel Number 023-040-028-5 at 7000 Holland Tract Road, Knightsen in Section 24, T2N, R3E MDM&M, as shown on Attachment A, which is attached hereto and made part of the Order by reference.
3. Order No. 82-009, adopted by the Board on 22 January 1982, prescribes requirements for treatment and disposal of domestic wastewater generated at the Holland Riverside Marina. This Order is neither adequate nor consistent with the current plans and policies of the Board.
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4. The facility comprises a recreational marina with covered and open berths, a small store, a mobile home, an office, a launching ramp, and ancillary improvements. There are four restrooms available at the berths. Each includes toilets, showers, and clothes washing machines. The marina also provides holding tank pumping services for boaters. Occupancy rates and facility usage vary seasonally.
5. Domestic wastewater is conveyed from the docks via flexible hoses (across water) and underground pipelines (on land) to the wastewater treatment plant, which is located on Holland Tract.
6. The Discharger has not performed chemical characterization of the influent waste streams. However, based on standard engineering references, staff estimates that the influent BOD and total suspended solids both range from 200 to 300 mg/L.
7. Wastewater is discharged to a 1,300-square foot lined aeration basin for treatment. The aerator is manually operated. Effluent from the aeration pond flows by gravity to a 900-square foot lined facultative pond. A two-cell percolation pond with a total surface area of 6,300 square feet is used for effluent disposal. The treatment plant site layout is shown on Attachment B, which is attached hereto and made part of the Order by reference.

8. Both pond liners are constructed of Hypalon™, a scrim-reinforced plastic lining, underlain by a layer of sand. The liners are about 20 years old and are badly damaged.
9. The gravity pipelines that drain effluent from the aeration basin to the facultative pond and from the facultative pond to the percolation are placed such that freeboard in those ponds is typically less than two feet.
10. The original treatment plant design flow rate was 7,500 gpd average daily flow, and the Discharger's water balance shows that the current hydraulic capacity of the system is at least that much.
11. Based on analytical data presented in the RWD, effluent from the aeration pond is characterized as follows:

Parameter	Concentration
BOD ₅	61 mg/L
Total Suspended Solids	1,300 mg/L
Total Dissolved Solids	760 mg/L
pH	7.1
Zinc	0.072 mg/L
Total Phenols	<0.10 mg/L
Formaldehyde	<0.050 mg/L

12. Digested biosolids accumulate within the facultative pond, and are periodically pumped and disposed of by a licensed septage hauler.
13. Staff anticipates that the shallow water table is within approximately five feet of the ground surface in the vicinity of the wastewater treatment plant. The Discharger has not previously performed groundwater monitoring.
14. Surrounding land uses are agricultural and rural residential.
15. The mean annual rainfall for the vicinity of the site is approximately 13 inches (Department of Water Resources).
16. The reference evapotranspiration rate (ET₀) published by CIMIS for the closest weather station in Brentwood is 48 inches per year.
17. Surface water drainage is to the San Joaquin River via Rock Slough and the Old River.
18. The beneficial uses of the San Joaquin River are municipal and domestic supply; agricultural supply; industrial supply; recreation; freshwater habitat; migration; spawning; wildlife habitat; and navigation.

19. The beneficial uses of underlying groundwater are municipal, industrial, and agricultural supply.
20. Federal regulations for stormwater discharges promulgated by the U.S. Environmental Protection Agency (40 CFR Parts 122, 123, and 124) require specific categories of facilities which discharge stormwater to obtain NPDES permits. The Discharger is required to obtain coverage for the marina under the State Water Resource's Control Board's General Permit for Discharge of Storm Water Associated with Industrial Activity.
21. The Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento River and San Joaquin River Basins (hereafter Basin Plan), which contains water quality objectives for waters of the Basins. These requirements implement the Basin Plan.
22. The Board has considered anti-degradation pursuant to State Board Resolution No. 68-16 and finds that not enough data exists to determine whether this discharge is consistent with those provisions. Therefore, this Order provides a timeline for data collection to determine whether the discharge will cause an increase in groundwater constituents above that of background levels. If the discharge is causing such an increase, then the Discharger may be required to cease the discharge, implement source control, change the method of disposal, or take other action to prevent groundwater degradation.
23. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."
24. The action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with Title 14, California Code of Regulations (CCR), Section 15301.
25. This discharge is exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq., (hereafter Title 27). The exemption pursuant to Section 20090(b), is based on the following:
 - a. The Board is issuing waste discharge requirements,
 - b. The discharge complies with the Basin Plan, and

- c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.
26. The Board has notified the Discharger, and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
27. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 82-009 is rescinded and Western Waterways, Inc., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following.

Note: Other prohibitions, conditions, definitions, and methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991.

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Surfacing of wastewater outside of the ponds is prohibited.
4. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the California Water Code, Section 13050.
5. The discharge shall not cause the degradation of any water supply.
6. Discharge of waste classified as hazardous, as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15, or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.
7. The discharge of any wastewater other than that from the domestic sources described herein is prohibited. Domestic sources shall include bathrooms; laundry rooms; kitchens used by staff, tenants, and customers; and non-hazardous wastewater generated during maintenance and testing of the wastewater conveyance and treatment systems.

B. Discharge Specifications:

1. The 30-day average daily discharge to the system shall not exceed 7,500 gpd.

2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
3. As a means of discerning compliance with Discharge Specification No. 2, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/l.
4. The wastewater treatment ponds shall not have a pH of less than 6.5 or greater than 8.5.
5. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
6. The ponds shall be managed to prevent the breeding of mosquitoes. In particular,
 - a. An erosion control program shall be developed and implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds within the ponds shall be minimized through control of water depth, harvesting, and/or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
7. The facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
8. **Effective 31 December 2001**, the freeboard in all ponds shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.
9. The conveyance, treatment, and disposal systems shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with the historical rainfall patterns.
10. **Effective 1 October 2002**, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 8 and No. 9. This requirement shall also be satisfied on or about 1 October each year thereafter.
11. The treatment and disposal facilities shall be enclosed with durable fencing designed to prevent public access to the facility. Any gates shall be kept locked when the facility is unattended.
12. The Discharger shall post signs that clearly inform the public of the nature of the facility and warning of health risks associated with contacting the wastewater.

C. Effluent Limitations

Discharge of effluent to the percolation pond in excess of the following limits is prohibited:

Parameter	Concentration Limit (mg/L)	
	30-Day Average	Daily Maximum
BOD ₅	80	160
Nitrate (as nitrogen)	10	30
Ammonia	0.5	5
Zinc	2	10
Total Phenols	0.005	0.05
Formaldehyde	0.1	1

D. Solids Disposal Requirements:

1. Collected screenings, grit, sludge, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Storage, use and disposal of sewage sludge shall comply with existing Federal, State, and local laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503 and the Statewide General Order for the Discharge of Biosolids (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ).
3. Sludge and other solids shall be removed from the facultative pond as needed to ensure optimal plant operation and adequate hydraulic capacity.
4. Disposal of biosolids at a permitted municipal solid waste landfill or at a permitted publicly owned treatment works is acceptable. The Discharger may also elect to dispose of its biosolids at a facility permitted under Order No. 2000-10-DWQ or at a similar facility permitted under individual WDRs. No matter where the biosolids are taken, the Discharger must comply with all sampling and analytical requirements of the entity that accepts the waste.
5. If the State Water Resources Control Board and the Regional Water Resources Control Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger shall comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

E. Groundwater Limitations:

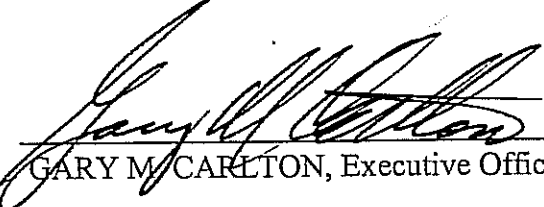
The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality, except for coliform bacteria. The total coliform bacteria count shall not exceed 2.2 MPN/100 ml over any 7-day period.

F. Provisions:

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code.
 - a. **By 30 July 2001**, the Discharger shall submit a Treatment Pond Rehabilitation Workplan that describes specific measures planned to replace the existing pond liners and to ensure compliance with Discharge Specification B.8. The workplan shall include material and construction specifications for all liner systems and/or pond berm improvements and shall be prepared by a California Registered Engineer.
 - b. **By 30 August 2001**, the Discharger shall submit a copy of an executed Notice of Intent to comply with the State Water Resources Control Board's General Order for Discharge of Storm Water Associated with Industrial Activities.
 - c. **By 30 December 2001**, the Discharger shall submit a report prepared by a California Registered Engineer certifying that the Treatment Pond Rehabilitation Workplan has been fully implemented.
 - d. **By 28 February 2002**, the Discharger shall submit a Groundwater Monitoring Workplan prepared in accordance with the first section of Attachment C: *"Monitoring Well Workplan and Monitoring Well Installation Report Guidance."* At least one background (upgradient) well and one downgradient well shall be proposed to monitor the facility. The wells shall be designed to yield samples representative of the uppermost portion of the first aquifer underlying the site.
 - e. **By 30 July 2002**, the Discharger shall submit a Monitoring Well Installation Report. The report shall contain the information specified in the second section of Attachment C.
2. The Discharger shall comply with the Monitoring and Reporting Program No. 5-01-093, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

4. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving the disposal or reclamation areas, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
5. The Discharger shall submit to the Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
6. The Discharger shall use the best practicable cost-effective control technique(s) currently available to comply with discharge limits specified in this order.
7. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.
8. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, then the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.
9. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
10. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
11. The Board will review this Order periodically and may revise requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 April 2001.


GARY M. CARLTON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 5-01-093

FOR

WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the treatment process, effluent disposal ponds and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Specific sample station locations shall be approved by Regional Board staff prior to implementation of sampling activities.

All samples shall be representative of the volume and the nature of the discharge and matrix of the sampled medium. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

INFLUENT MONITORING

Samples of influent wastewater shall be collected at approximately the same time as effluent samples and should be representative of the influent at the plant headworks prior to any treatment. At a minimum, influent monitoring shall consist of the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Observation	Daily	Monthly
pH	pH units	Grab	Monthly	Monthly
BOD ₅ at 20° C	mg/l	Grab	Monthly	Monthly

EFFLUENT MONITORING

Samples of effluent shall be taken at the point of discharge from the facultative pond to the percolation pond. At a minimum, effluent monitoring shall consist of the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
pH	pH units	Grab	Monthly	Monthly
BOD ₅ at 20° C	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly	Monthly
Nitrate (as nitrogen)	mg/L	Grab	Monthly	Monthly
Ammonia	mg/L	Grab	Monthly	Monthly
Total Phenols ¹	mg/L	Grab	Quarterly	Quarterly
Formaldehyde ¹	mg/L	Grab	Quarterly	Quarterly
Zinc ¹	mg/L	Grab	Quarterly	Quarterly

¹ If the analytical result is consistently less than the effluent limitation after one year of monitoring, then the monitoring frequency may be reduced to once per year, with sampling occurring during the third quarter.

POND MONITORING

All four wastewater treatment and disposal ponds shall be monitored as follows. If any pond is empty on the scheduled monitoring date, the Discharger may report the freeboard monitoring result as "dry".

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Freeboard	Feet (+/- 0.1')	Observation	Weekly	Monthly
Dissolved Oxygen	mg/L	Grab	Weekly	Monthly

BIOSOLIDS MONITORING

When biosolids are transported off-site for disposal, then the Discharger shall submit records identifying the hauling company, the amount of biosolids transported, the date removed from the facility, the location of disposal, and copies of all analytical data required by the entity accepting the waste. If the Discharger wishes to dispose of biosolids onsite through beneficial reuse, then the Discharger shall submit the annual report information as contained in the Statewide General Order for the Discharge of Biosolids (Water Quality Order No. 2000-10-DWQ) (or any subsequent document which replaces Order No. 2000-10-DWQ).

GROUNDWATER MONITORING

Prior to construction of any new groundwater monitoring wells, the Discharger shall submit a Groundwater Monitoring Well Installation Workplan to the Board for review and approval.

All wells shall be sampled and analyzed quarterly following standard EPA protocols. Prior to sampling, the groundwater elevation shall be measured at each well, and each well shall be purged of at least three well volumes until measurements of pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine the groundwater gradient and direction of flow. Groundwater samples shall be analyzed as follows:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sampling and Reporting Frequency</u> ¹
Groundwater elevation	feet (MSL datum)	Quarterly
pH	pH units	Quarterly
Total Dissolved Solids	mg/l	Quarterly
Nitrate (as nitrogen)	mg/l	Quarterly
Ammonia (as nitrogen)	mg/l	Quarterly
Total Coliform Organisms	MPN/100 ml ²	Quarterly

¹ Beginning with the fourth quarter of 2001.

² 15-tube quantitative test method.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., influent, effluent, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a registered professional engineer or geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. Results of influent, effluent, and pond monitoring. Data shall be presented in tabular format.
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements.
3. If requested by staff, copies of laboratory analytical report(s).
4. A calibration log verifying weekly calibration of field monitoring instruments (e.g., DO, pH, or EC meters) used to collect reported data.

B. Quarterly Monitoring Reports

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarter is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of groundwater monitoring. The results of regular monthly monitoring reports for March, June, September and December may be incorporated into their corresponding quarterly monitoring report.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this MRP, and the Standard Provisions and Reporting Requirements. Field logs shall be submitted for each well, documenting depth to groundwater; parameters measured before, during, and

after purging; method of purging; calculation of casing volume; and total volume of water purged.

3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any.
4. A narrative discussion of the analytical results for all media and locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
5. A comparison of monitoring data to the discharge specifications and groundwater limitations, and explanation of any violation of those requirements.
6. Summary data tables of historical and current water table elevations and analytical results.
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum.
8. Copies of laboratory analytical report(s) for all samples.

C. Annual Report

An Annual Report shall be submitted as the fourth Quarterly Monitoring Report by **1 February of each year**. The Annual Report shall include a summary of all monitoring data obtained during the previous calendar year. In addition to the information provided in monthly quarterly reports, the Annual Report shall include the following:


1. Tabular and graphical summaries of all data collected during the year.
2. An evaluation of groundwater quality.
3. An evaluation of the performance of the wastewater treatment system and effluent storage pond, as well as a forecast of the flows anticipated in the next year.
4. Summary of information on the disposal of all biosolids including volume removed and location of disposal, analytical results, and whether the Discharger anticipates removing biosolids in the coming year;
5. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
6. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

MONITORING AND REPORTING PROGRAM NO. 5-01-093
WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

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The Discharger shall implement the monitoring program for treatment plant operations as of the date of this Order.

ORDERED BY:

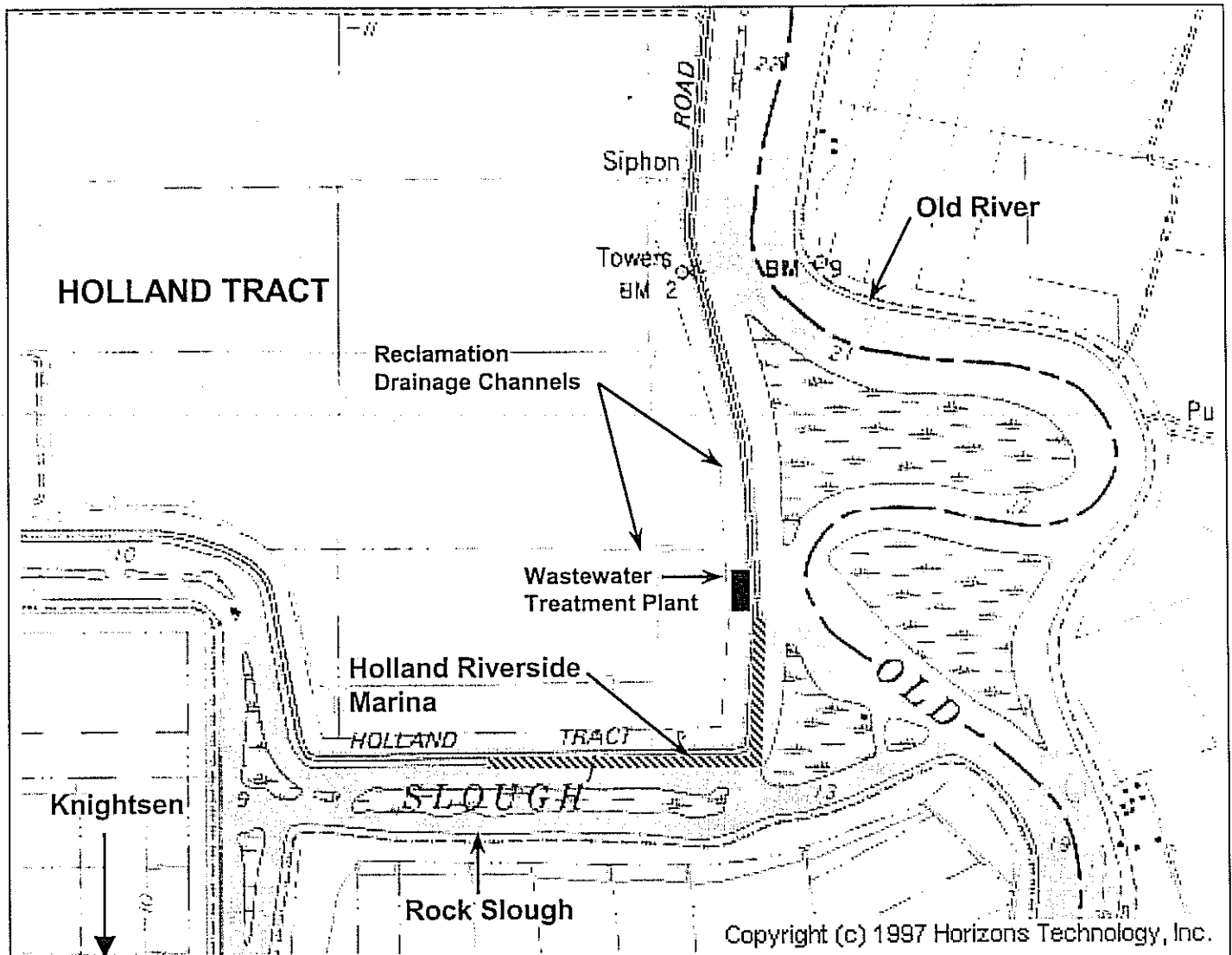

GARY M. CARLTON, Executive Officer

27 April 2001

(Date)

ALO: 27 April 2001

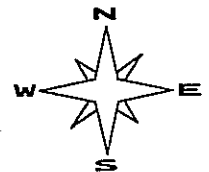
ATTACHMENT A



Drawing Reference:
WOODWARD ISLAND
U.S.G.S TOPOGRAPHIC MAP
7.5 MINUTE QUADRANGLE

SITE LOCATION MAP
WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

ORDER NO. 5-01-093



approx. scale
1 in. = 1,200 ft.

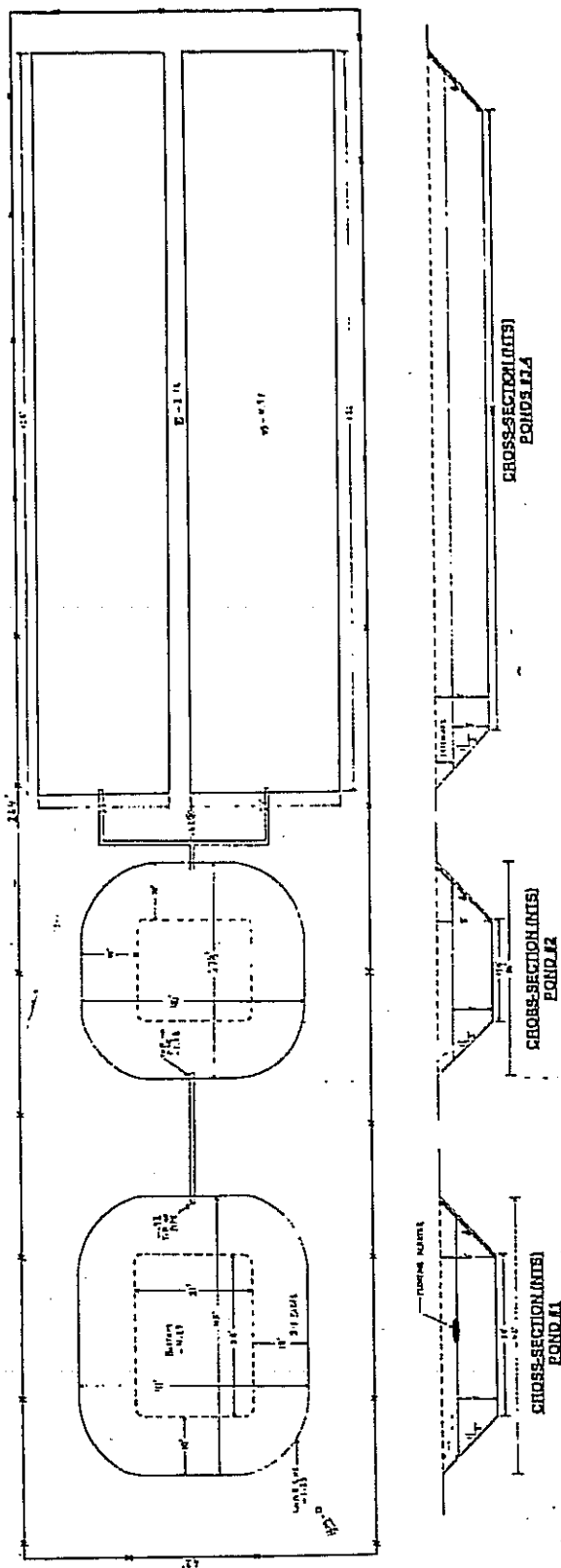
ATTACHMENT B

Percolation Ponds

Facultative Pond

Aeration Pond

Approx. Scale:
1" = 33 feet



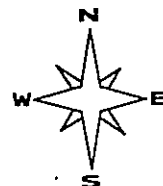
Drawing Reference:

Environmental Engineering Associates
On-Site Sewage Disposal System Site Plan
February 2001

SITE PLAN

WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA

CONTRA COSTA COUNTY
ORDER NO. 5-01-093



WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-01-093

ATTACHMENT C
MONITORING WELL WORKPLAN AND MONITORING WELL
INSTALLATION REPORT GUIDANCE

WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing the minimum listed information. Wells may be installed after Board staff approves the workplan. Following installation of the monitoring wells, the Discharger shall submit a report of results, as described below. All workplans and reports must be prepared under the direct supervision of, and signed by, a geologist registered by the State of California.

Monitoring Well Installation Workplan

A. General Information:

- Proposed monitoring well locations and rationale for location selection
- Equipment decontamination procedures
- Topographic map showing any existing monitoring wells, proposed wells, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details: describe proposed drilling and logging methods

C. Monitoring Well Design:

- Casing diameter
- Borehole diameter
- Depth of surface seal
- Well construction materials
- Diagram of well construction
- Type of well cap
- Size of perforations and rationale
- Grain size of sand pack and rationale
- Thickness and position of bentonite seal and sand pack
- Depth of well, length and position of perforated interval

D. Well Development:

- Method of development to be used
- Method of determining when development is complete
- Method of development water disposal

E. Surveying Plan: discuss how each well will be surveyed to a common reference point.

F. Well Sampling:

- Minimum time after development before sampling (48 hours)

Well purging method and amount of purge water
Sample collection and preservation method
QA/QC procedures

G. Water Level Measurement:

The elevation reference point at each monitoring well shall be within 0.01 foot.
Ground surface elevation at each monitoring well shall be within 0.1 foot.
The method and time of water level measurement shall be specified.

H. Proposed time schedule for well installation and development.

Monitoring Well Installation Report

A. Well Construction:

Number and depth of wells drilled
Date(s) wells drilled
Description of drilling and construction
Approximate locations relative to facility site(s)
A well construction diagram for each well must be included in the report, and should contain the following details:
Total depth drilled
Depth of open hole (same as total depth drilled if no caving occurs)
Footage of hole collapsed
Length of slotted casing installed
Depth of bottom of casing
Depth to top of sand pack
Thickness of sand pack
Depth to top of bentonite seal
Thickness of bentonite seal
Thickness of concrete grout
Boring diameter
Casing diameter
Casing material
Size of perforations
Number of bags of sand
Well elevation at top of casing
Depth to ground water
Date of water level measurement
Monitoring well number
Date drilled
Location

- B. Well Development:
- Date(s) of development of each well
 - Method of development
 - Volume of water purged from well
 - How well development completion was determined
 - Method of effluent disposal
 - Field notes from well development should be included in report.
- C. Well Survey Data: provide reference elevations for each well and surveyor's notes
- D. Water Sampling:
- Date(s) of sampling
 - How well was purged
 - How many well volumes purged
 - Levels of temperature, EC, and pH at stabilization
 - Sample collection, handling, and preservation methods
 - Sample identification
 - Analytical methods used
 - Laboratory analytical data sheets
 - Water level elevation(s)
 - Groundwater contour map
- E. Explanation of any deviation from the approved workplan.

INFORMATION SHEET

ORDER NO. 5-01-093
WESTERN WATERWAYS, INC.
HOLLAND RIVERSIDE MARINA
CONTRA COSTA COUNTY

The Discharger owns and operates a private marina on Rock Slough near Knightsen. The facility comprises covered and open berths, a small store, a mobile home, an office, a launching ramp, and ancillary improvements. Restrooms at the berths have toilets, showers, and clothes washing machines. The marina also provides holding tank pumping services for boaters. Occupancy rates and facility usage vary seasonally.

Up to 7,500 gallons per day of domestic wastewater are conveyed from the docks to the wastewater treatment plant, which is located on Holland Tract. Wastewater is discharged to a lined aeration basin for treatment. Effluent from the aeration pond flows to a lined facultative pond and then to a percolation pond. Both pond liners are plastic and are underlain by a layer of sand. The liners are about 20 years old and are badly damaged. The pipelines that drain effluent from the aeration basin to the facultative pond and from the facultative pond to the percolation are placed such that freeboard in those ponds is typically less than two feet.

Staff anticipates that groundwater is within five feet of the ground surface in the vicinity of the wastewater treatment plant. The Discharger has not previously performed groundwater monitoring.

The WDRs include a time schedule for improvements needed to protect and monitor groundwater quality. By 31 December 2001, the Discharger must re-line the ponds and reconstruct the effluent pipeline or pond berms to ensure that freeboard is never less than two feet. Effluent limitations are also included for chemicals commonly found in the holding tanks of recreational boats (zinc, phenols, formaldehyde, and ammonia). The limitations were selected from the applicable Water Quality Goals for groundwater. The Discharger will also construct groundwater monitoring wells and begin groundwater monitoring in 2002.